

$$(52) \quad x^{\frac{1}{6}} \cdot x^{\frac{2}{3}} = x^{\frac{1}{6} + \frac{2}{3}} = x^{\frac{5}{6}} = \boxed{\sqrt[6]{x^5}}$$

$$\frac{1}{6} + \frac{2}{3} \cdot \frac{2}{2}$$

$$\frac{1}{6} + \frac{4}{6} = \frac{5}{6}$$

$$(53) \quad \left( x^{-\frac{3}{8}} y^{\frac{1}{4}} \right)^{16}$$

$$x^{-\frac{3}{8} \cdot 16} \quad y^{\frac{1}{4} \cdot 16}$$

$$x^{-6} \quad y^4 = \boxed{\frac{y^4}{x^6}}$$

$$\textcircled{56} \quad x^{\frac{1}{2}} - 3 = 8$$

$+3 \quad +3$

$$x^{\frac{1}{2}} = 11$$

$$\sqrt{x} = 11$$

$$(\quad)^2 \quad (\quad)^2$$

$$x = 121$$

(47)

$$3^{0.2}$$

$$3^{\frac{1}{5}}$$

$$\sqrt[5]{3}$$

(48)

$$p^{-2.25}$$

$$p^{-\frac{9}{4}}$$

$$\frac{1}{p^{9/4}} =$$

$$\sqrt[4]{\frac{1}{p^9}}$$

# "Quiz"

① Simplify  $\sqrt[3]{81x^2y^5}$

② Simplify  $4\sqrt{2x} \cdot 5\sqrt{6xy^2}$

③ Rationalize + simplify  $\frac{5+\sqrt{3}}{2-\sqrt{3}}$

④ Simplify  $(32)^{-4/5}$

⑤ Solve for x  $\sqrt{3x+7} + 1 = x$

$$\sqrt[3]{81x^2y^5}$$

$$\sqrt[3]{81}$$



$$\sqrt[3]{27} \cdot \sqrt[3]{3}$$



$$3\sqrt[3]{3}$$

$$y\sqrt[3]{x^2y^2}$$

>

$$3y\sqrt[3]{3x^2y^2}$$

$$4\sqrt{2x} \cdot 5\sqrt{6xy^2}$$

$$20\sqrt{12x^2y^2}$$

$$20xy\sqrt{12}$$



$$\sqrt{4} \cdot \sqrt{3}$$

$$2\sqrt{3}$$

$$40xy\sqrt{3}$$

$$\frac{5+\sqrt{3}}{2-\sqrt{3}} \cdot \frac{2+\sqrt{3}}{2+\sqrt{3}} = \boxed{\frac{13+7\sqrt{3}}{1}}$$

Bottom

$$(2-\sqrt{3})(2+\sqrt{3})$$

$$4 + \cancel{2\sqrt{3}} - \cancel{2\sqrt{3}} - \sqrt{9}$$

$$4 - 3 = \boxed{1}$$

Top

$$(5+\sqrt{3})(2+\sqrt{3}) =$$

$$10 + 5\sqrt{3} + 2\sqrt{3} + \sqrt{9}$$

$$\boxed{13 + 7\sqrt{3}}$$

$$(32)^{-4/5} \rightarrow \frac{1}{32^{4/5}} \rightarrow \frac{1}{(\sqrt[5]{32})^4} \rightarrow \frac{1}{2^4} \rightarrow \boxed{\frac{1}{16}}$$

0.0625

$$\sqrt{3x+7} + 1 = x$$

$\begin{array}{cc} -1 & -1 \end{array}$

$$\sqrt{3x+7} = x - 1$$

$$(\quad)^2 (\quad)^2$$

$$3x+7 = (x-1)(x-1)$$

$$\begin{array}{rcl} 3x+7 & = & x^2 - 2x + 1 \\ -3x - 7 & & -3x - 2 \end{array}$$

$$0 = x^2 - 5x - 6$$

$$0 = (x+1)(x-6)$$

$$\boxed{X = \cancel{-1}, 6}$$